

Appendix E – Minimum Impact Fire Suppression Tactics for Cypress Island

General Guidelines

- The Incident Commander will consult with a Natural Areas Program representative or Resource Advisor when assigned to a fire on Cypress Island. Immediate notification will be made to one of the following resources:
 - NW Region Natural Areas Manager
DNR NW Region Office, Sedro-Woolley
360-856-3500
 - NW Region Natural Areas Steward
DNR NW Region Office, Sedro-Woolley
360-856-3500
 - Natural Areas Ecologist
Asset Management and Protection Division
360-902-1600
 - Natural Areas Program Manager
Asset Management and Protection Division
360-902-1600
- The Natural Areas Program representative will inform the Incident commander of the purpose of the NRCA/NAP, the management objectives for the primary features on Cypress Island and the need to employ Minimum Impact Suppression Tactics when possible.
- All fire activities should be conducted in a way that minimizes impact to the resources of Cypress Island.
- Fire suppression efforts should emphasize early detection and early suppression in order to minimize impact from containment/control efforts.
- Avoid firefighting in Highly Sensitive designated areas, if possible. Do not allow any operations on the grassland balds north of Eagle Harbor (Eagle Cliff and Mountain Vista Balds).
- Avoid use of salt water during suppression activities. If necessary, salt water may be used during initial attack with transition to fresh water during extended attack.

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- Use existing fuel breaks and trail corridors as much as possible, rather than creating new firelines. When new firelines are necessary, hand lines are preferable to bulldozers.
 - Use plain water, wet-water or foam. Avoid the use of retardants. If retardant must be used to protect a structure, do not use in or near open water sources (lakes, streams, estuaries, wetlands, shorelines or bays).
 - Avoid any activity that would alter the flow of water into or out of wetlands or shore areas.
 - Avoid any activity that would produce slumping, erosion or increased sedimentation.
 - Restrict fire vehicles to primary trails of adequate width.
 - Protect cultural resources. Restrict firefighting activities in areas of known archaeological resources.
 - Allow fire to burn to the containment/confinement/control perimeter line.
 - Inform all personnel of the NRCA and NAP management goals and give clear instruction in Leave No Trace principles.
 - Respect private property. Inform neighboring landowners and seek permission for travel or operations on private property.
 - Evaluate the need for notification and/or evacuation of the visiting public. Restrict public access in the vicinity of the fire.

Establishing and Setting Up Camp

- If fire camps are unavoidable, use existing campsites at Pelican Beach, Cypress Head or the Compound.
- If existing campsites are not available, consult the Resource Advisor or Natural Area Program representative to help identify the most resilient sites on impacted or hardened surfaces. Consider use of the Compound parking area, Secret Harbor, the Airfield and Reef Point.
- Consider impacts on both present and future visitors. An agency commitment to conservation values will promote those values to the public.
- Plan camp components carefully. Define cooking, sleeping, latrine and water supplies.
- Limit travel ways within, to and from camp.
- Minimize disturbance to land in preparing sites. Do not clear vegetation, trench or excavate flat spots to create bedding areas.
- Avoid introduction of noxious weed seeds by ensuring that crew gear, including tents, boots and clothing are free of weed seeds before arrival on the island.

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- If outside of an existing campground, use portable backcountry latrines and fly out human waste as necessary. When away from camp, individuals must use the “cat-hole” method of disposing of human waste. Holes should be dug 6-8” deep and be located at least 200 feet from water sources. All toilet paper and feminine hygiene or paper products should be carried out. Education of all personnel in these Leave No Trace principles is mandatory.
 - No campfires are allowed outside of the approved fireplaces located in the designated campgrounds at Pelican Beach, Cypress Head and the Compound. Use camp stoves for cooking.
 - Designate a common area for personnel to wash up. Provide fresh water, biodegradable soap and a place for wastewater. Carry water and bathe away from lakes and streams. Do not introduce soap, shampoo, or other personal grooming chemicals into water sources.
 - Filter food particles from kitchen wastewater before disposing.
 - Store food properly so that it is not accessible to wildlife. Use sealed containers.
 - Do not allow garbage and food particles to accumulate in camp. Remove garbage and food scraps on a regular basis.
 - Do not use nails in trees.
 - Constantly evaluate the impacts that will occur, both short and long term.

Helispot Construction

- Consult with the Natural Areas Program representative or Resource Advisor in helispot location.
- Whenever possible, locate helispots in weed free areas, to prevent the spread of noxious weeds on the island.
- When planning for helispot location, determine the primary function of each helispot, i.e.: crew shuttle, logistical support, or both.
- If a helispot is only needed for logistical support to deliver and retrieve supplies or gear, consider using a long line remote hook in lieu of constructing a helispot.
- If a helispot is needed for crew shuttle, consider the minimum size of the helicopter that could do the job, if you have an option, and still meet suppression objectives.
- Use existing, hardened openings at the Eagle Harbor landing, the Compound, the airfield, Secret Harbor or Reef Point. If these are not accessible, use natural openings in the minimally sensitive areas only. Do not remove trees to create new openings.
- Avoid high public use areas if possible and control public access in the vicinity of the chosen helispot area.

Initial Attack Phase

- Consult with Natural Areas Program representative or Resource Advisor before Initial Attack operations begin.
- Select procedures, tools and equipment that least impact the environment.
- Consider the use of water as a fireline tactic. Use a mist application rather than straight stream.
- Use fresh water if possible. Use Cypress Lake and Bradberry Lake as the water sources. Ensure that buckets are clean of non-native vegetation and seeds before use. Monitor lake level and impacts during incidents of any duration.
- All equipment brought to the island should be free of noxious weed seeds. Request that equipment is examined and cleaned before arrival.
- In light fuels consider:
 - Cold trail line. Constantly re-check.
 - Allowing fire to burn to natural barriers.
 - If constructed fireline is necessary, use minimum width and depth to check fire spread.
- In medium and heavy fuels consider:
 - Use of natural barriers and cold-trailing.
 - Cooling with dirt and water and cold-trailing.
 - If constructed fireline is necessary, use minimum width and depth to check fire spread.
 - Minimize bucking to establish fireline. Preferably move or roll material out of the intended constructed fireline area. If moving or rolling is not possible, or the down log is already on fire, build line around the log and let it be consumed.
- In aerial fuels, brush, trees and snags:
 - Minimize cutting of trees and snags.
 - Live trees should not be cut unless it is determined they will cause fire spread across the fireline or seriously endanger workers. If tree cutting occurs, cut the stumps flush with the ground and camouflage the cut surface with soil or brush.
 - Scrape around tree bases near fireline if hot and likely to cause fire spread.
 - Identify hazard trees with either an observer, flagging and/or glow-sticks.
- When using indirect attack:
 - Do not fall snags outside the constructed fireline, unless they are an obvious safety hazard to crews working in the vicinity.

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- On the intended burn-out side of the line, fall only those snags that would reach the fireline should they burn and fall over. Consider alternative means to falling, i.e.: foam application or bucket drops.
 - Review considerations listed above for aerial fuels, brush, trees and snags.

Mop-up Phase

- Location, type and extent of mop-up activity will be determined by the Incident Commander in consultation with the Natural Areas Program representative or Resource Advisor.
- Minimize mop-up activities in Highly Sensitive designated areas. Do not allow any operations on the grassland balds north of Eagle Harbor (Eagle Cliff and Mountain Vista Balds).
- Minimize impacts to streams and water sources. Use gravity socks and/or a combination of water blivits and fold-a-tanks. Avoid alteration of streambeds and lakeshores in the process of collecting water.
- Place absorbent cloth under the pumps and fuel cans to avoid fuel spills on the ground.
- Avoid using rehabilitated firelines as travel corridors whenever possible to minimize soil compaction.
- Consider using infrared detection devices along perimeter (aerial or hand-held).
- Align saw-cuts to minimize visual impacts from more heavily traveled corridors. Slope cut away from line of sight when possible.
- In light fuels:
 - Cold-trail areas adjacent to unburned fuels.
 - Do minimal spading; restrict spading to hot areas near fireline only.
 - Use extensive cold-trailing to detect hot areas.
- In medium to heavy fuels:
 - Cold-trail charred logs near fireline; do minimal scraping or tool scarring.
 - Minimize bucking of logs to check for hot spots or extinguish fire; preferably roll the logs and extinguish the fire.
 - Return logs to original position after checking or when ground is cool.
 - Refrain from making bonepiles; burned and partially burned fuels that were moved should be arranged in natural position as much as possible after they are cold.

-Consider allowing larger logs near the fireline to burn out, instead of bucking them into manageable lengths. Use a lever or pry bar to move large logs.

- Aerial fuels, brush, small trees and limbs:

-Remove or limb only those fuels, which, if ignited, have the potential to spread fire outside the fireline.

- Burning trees and snags:

-First consideration is to allow burning trees and snags to burn themselves out or down. Ensure adequate safety measures are communicated.

-Identify hazard trees with either an observer, flagging and/or glow-sticks.

-If burning trees/snags pose serious threat of spreading fire brands, consider attempting to extinguish with water or dirt.

Post Fire Rehabilitation

- Rehabilitation measures, other than the erosion control measures typically implemented by DNR Fire Control, must be approved by the Natural Areas Program.
- The Natural Areas Ecologist will determine whether revegetation is required to protect ecological features of the NRCA/NAP.
- Where damage to vegetation has occurred, natural recolonization is the preferred restoration strategy.
- Revegetation (planting or reseeding with species native to the site) will only occur if natural recolonization is unlikely to occur.
- If revegetation is necessary, the Natural Areas Ecologist will develop a restoration plan.

Figure 12: Submerged Aquatic Vegetation

For a color version of this figure see www.dnr.wa.gov/htdocs/aqr/reserves/home

Cypress Island Intertidal Submerged Vegetation

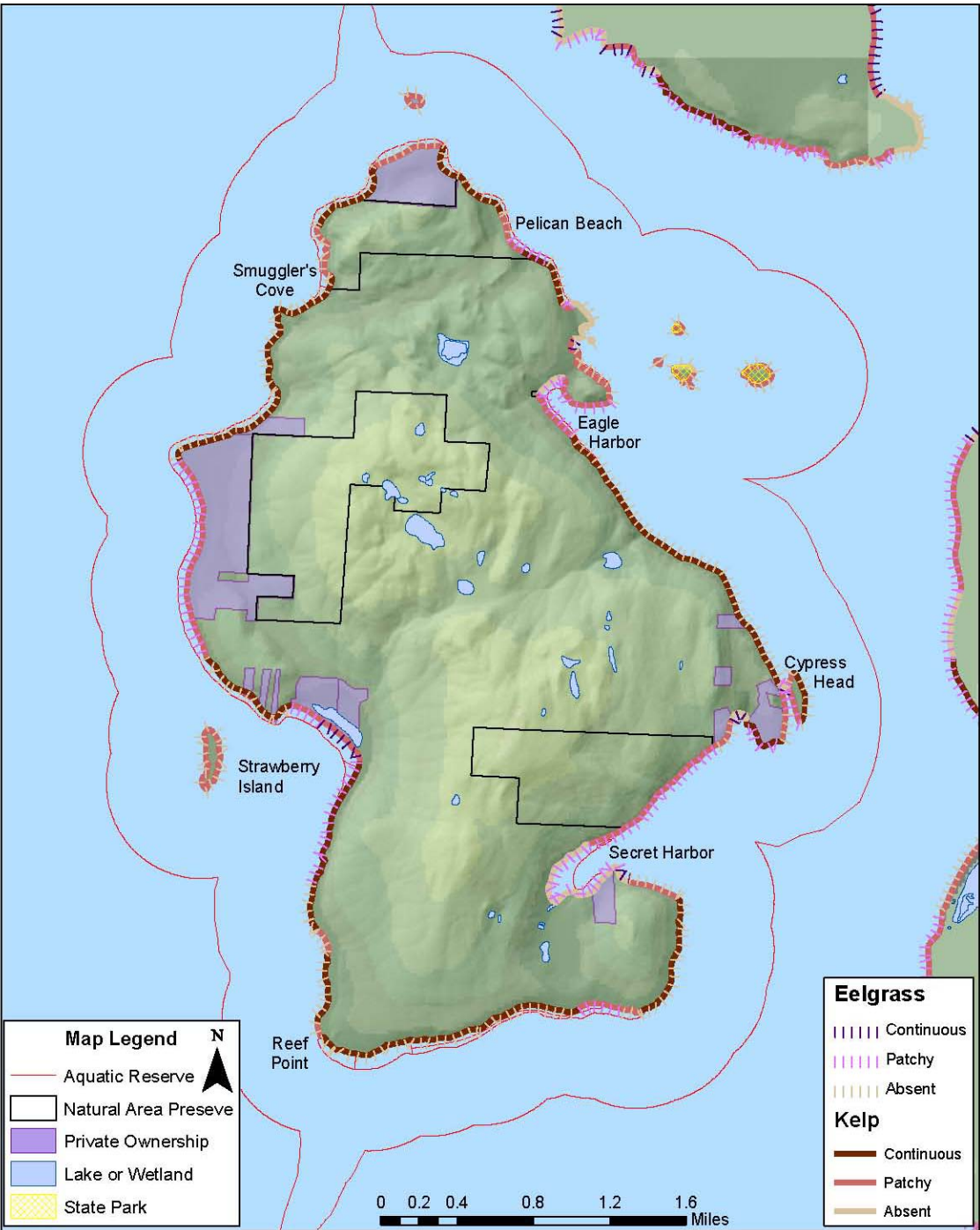


Figure 13: Invasive Aquatic Vegetation

For a color version of this figure see www.dnr.wa.gov/htdocs/aqr/reserves/home

Cypress Island Intertidal Invasive Vegetation

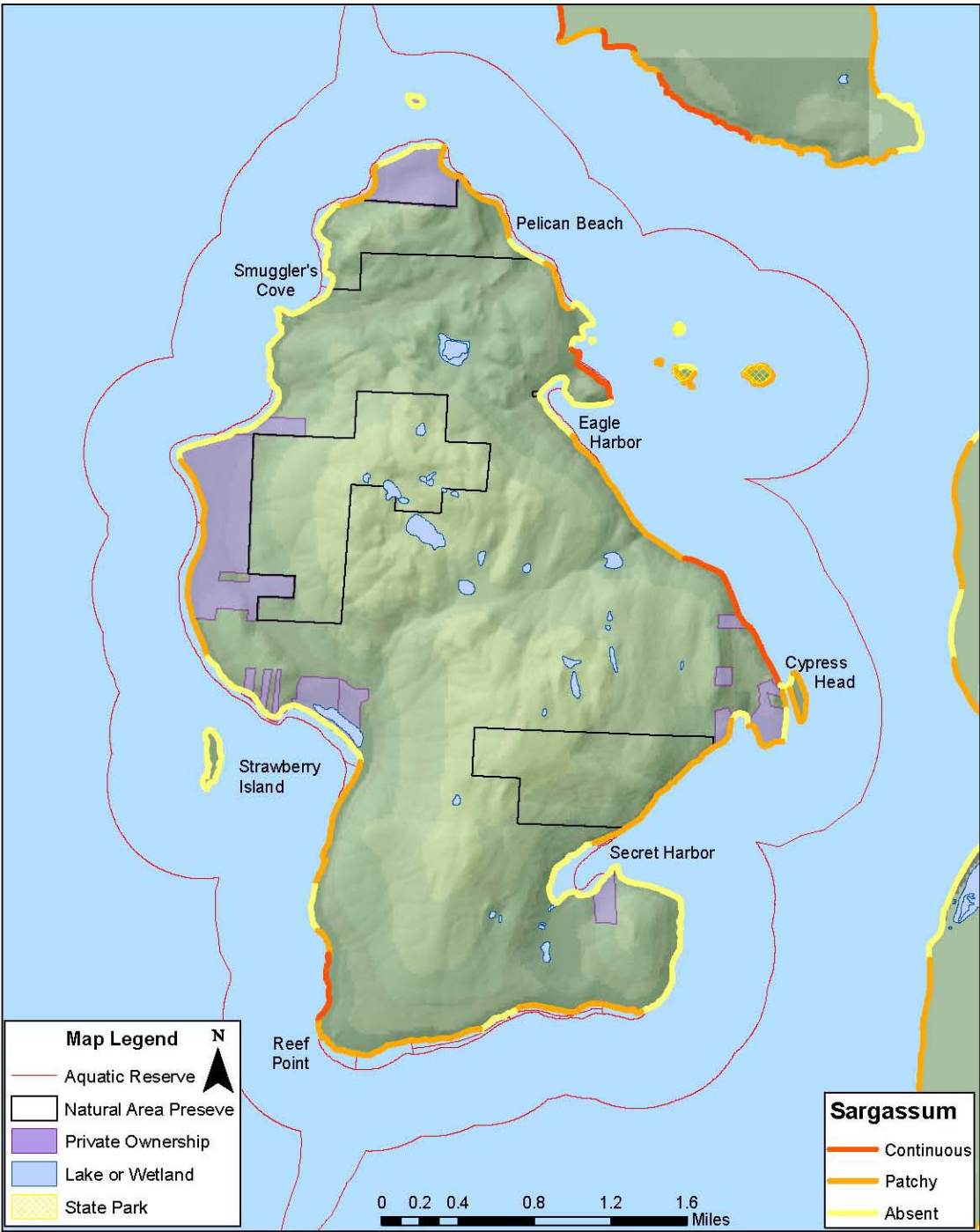


Figure 14: Nearshore Drift

For a color version of this figure see www.dnr.wa.gov/htdocs/aqr/reserves/home

Cypress Island Nearshore Drift

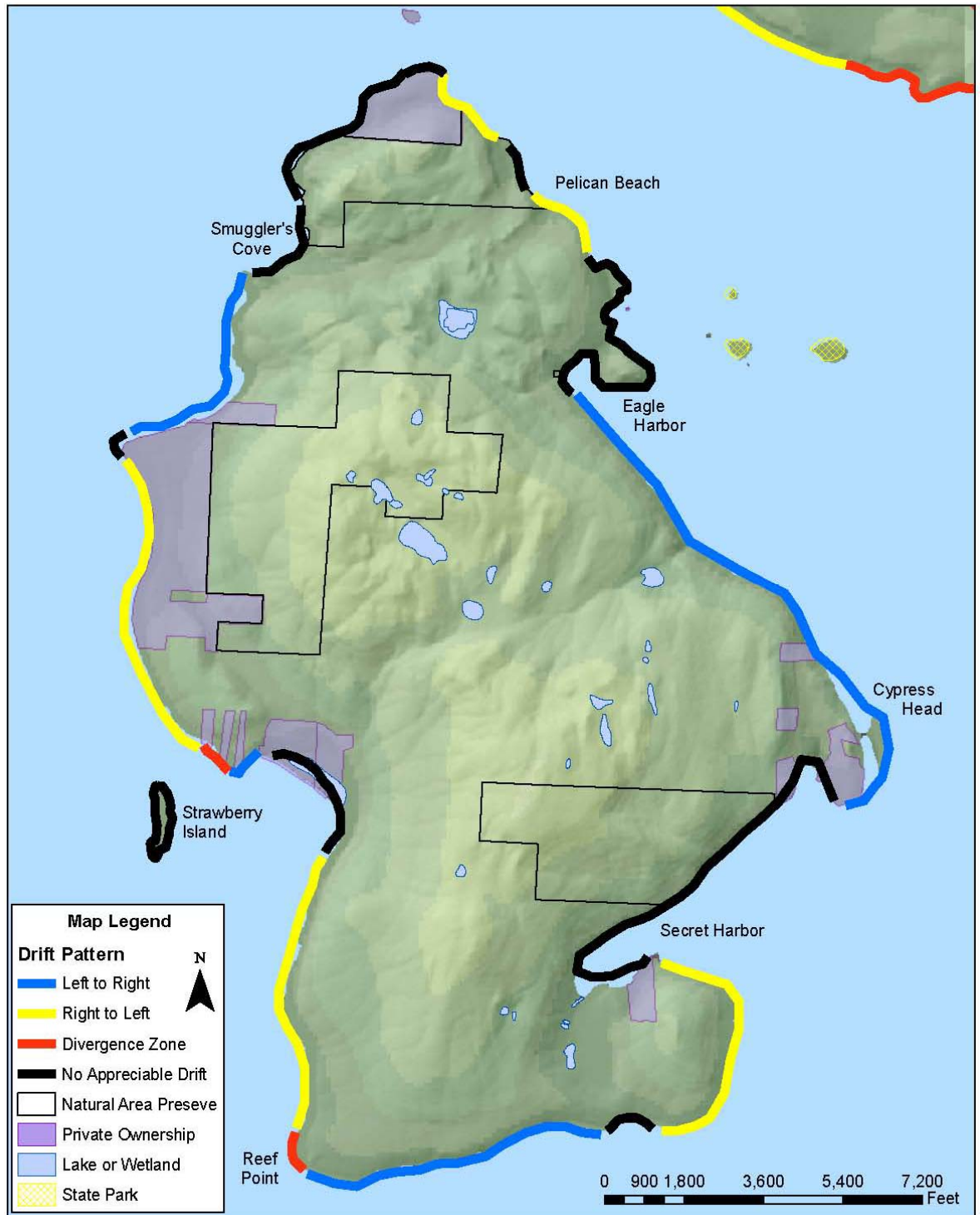


Figure 15: Salmon and Groundfish Resources

For a color version of this figure see www.dnr.wa.gov/htdocs/aqr/reserves/home

Cypress Island Salmon and Groundfish Resources

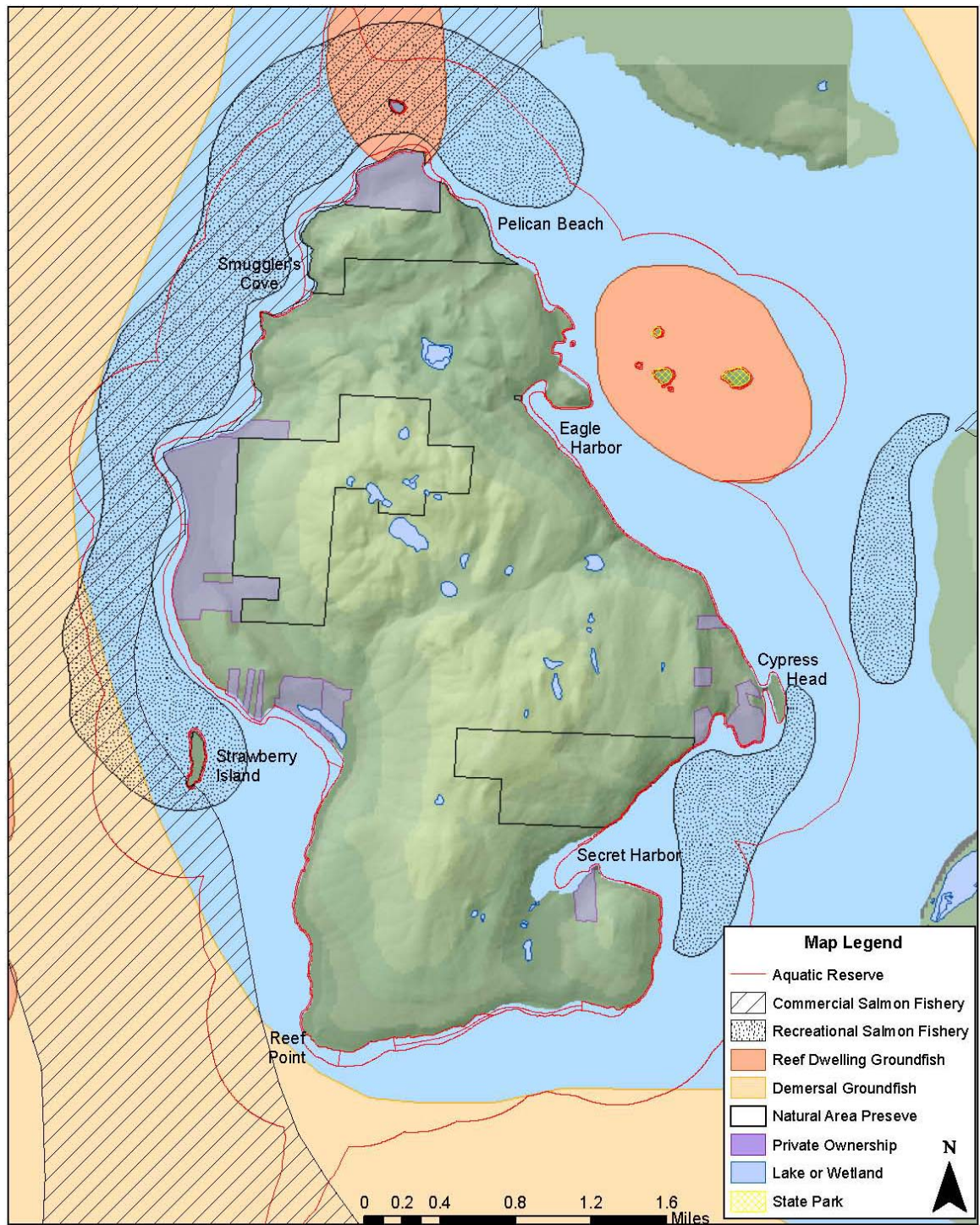
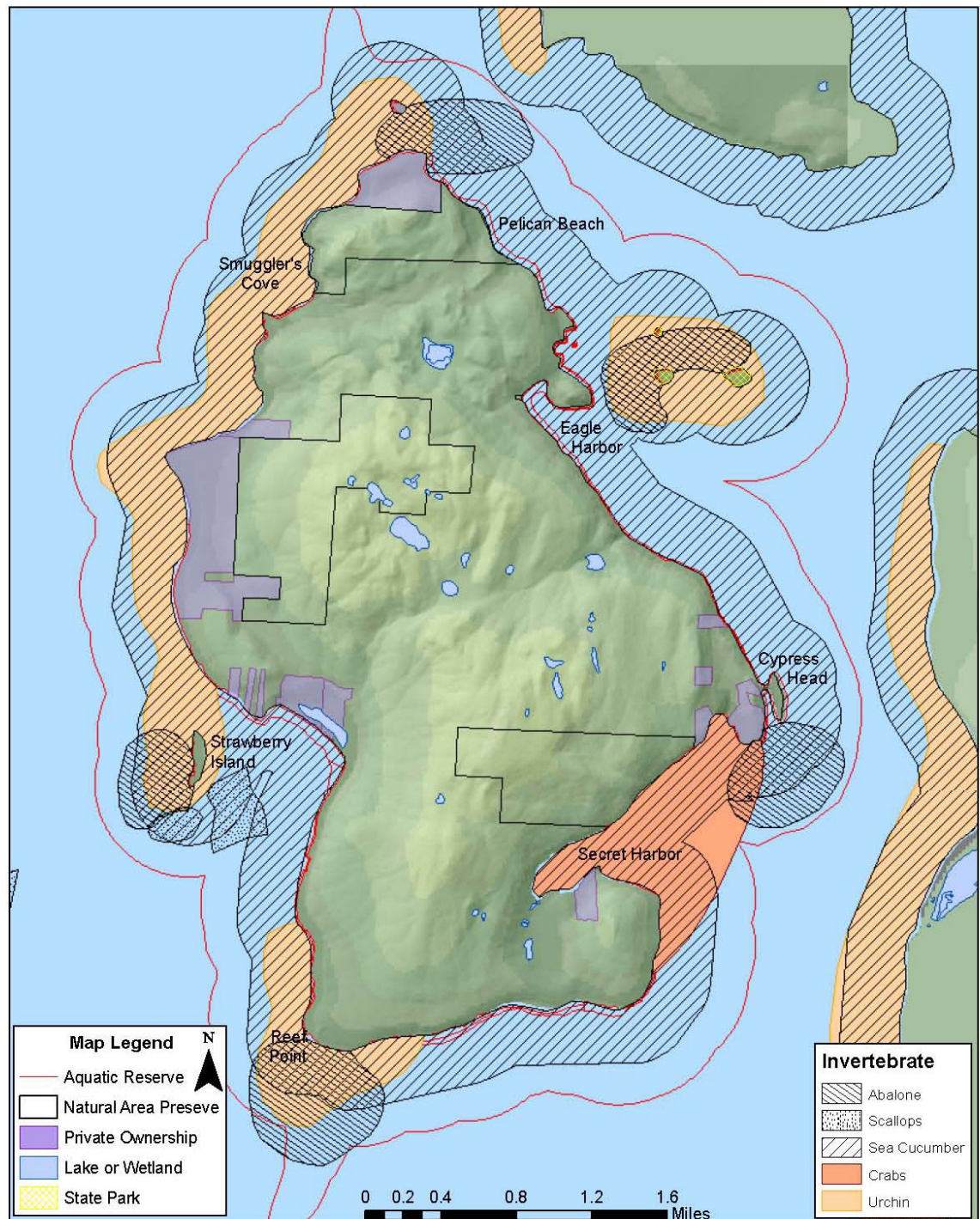


Figure 16: Marine Invertebrates

For a color version of this figure see www.dnr.wa.gov/htdocs/aqr/reserves/home

Cypress Island Invertebrate Resources



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